

THE CLAIMS

What is claimed is:

5 1. A substrate treating solution for imparting hydrophobicity to a substrate comprising an aqueous mixture of a C1 to C4 alkyl silicate compound and a silicate compound, with the compounds being present in combination in amount effective to increase
10 hydrophobicity of the substrate after the solution is applied thereto.

15 2. The solution of claim 1 wherein the silicate compound is an alkali metal alkyl silicate and the silicate compound is an alkali metal silicate, with the silicate and silicate compounds being present in a molar ratio of about 0.5:1 to 10:1.

20 3. The solution of claim 1 wherein the silicate compound is a alkali metal methyl silicate and the silicate compound is an sodium or potassium hydrosoluble silicate, with the silicate and silicate compounds being present in a molar ratio of about 1:1 to 5:1.

25 4. The solution of claim 1 wherein the silicate compound is a sodium or potassium methyl silicate and the silicate compound is an sodium or potassium ortho or meta-silicate, with the silicate and silicate compounds being present in a molar ratio of about 2:1 to 3:1.

30 5. The solution of claim 1 wherein the silicate compound is present in an amount of about 0.1 and 1% by

weight and the silicate compound is present in an amount of about 0.01 and 5% by weight.

6. The solution of claim 1 which further comprises
5 a coloring principle, an agrochemical principle or both.

7. A method of treating a substrate which comprises applying the solution of claim 1 upon or within the substrate to increase hydrophobicity of the substrate
10 or to render hydrophobic a portion of the substrate.

8. The method of claim 7 wherein the substrate is one or more of sand, gravel, tree bark, sawdust, compost, earth and solid porous materials.

15 9. The method of claim 7 wherein the solution is applied directly upon the substrate by spraying or sprinkling of the solution thereon.

20 10. The method of claim 7 wherein the solution is mixed with substrate forming components to form a pretreated mixture and the pretreated mixture is deposited to form the hydrophobic portion of the substrate.

25 11. The method of claim 7 wherein the silicate compound is present in the treated substrate in an amount of between about 2 and 60 Kg per hectare, and the silicate compound is present in the treated substrate in
30 an amount of between about 2 and 150 Kg per hectare.

12. The method of claim 7 wherein the silicate compound is an alkali metal alkyl silicate and the

silicate compound is an alkali metal silicate, with the silicate and siliconate compounds being present in a molar ratio of about 0.5:1 to 10:1.

5 13. The method of claim 7 wherein the siliconate compound is a alkali metal methyl siliconate and the silicate compound is an sodium or potassium hydrosoluble silicate, with the silicate and siliconate compounds being present in a molar ratio of about 1:1 to 5:1.

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14. The method of claim 7 wherein the siliconate compound is a sodium or potassium methyl siliconate and the silicate compound is an sodium or potassium ortho or meta-silicate, with the silicate and siliconate compounds being present in a molar ratio of about 2:1 to 3:1.

15 15. The method of claim 7 wherein the siliconate compound is present in an amount of about 0.1 and 1% by weight and the silicate compound is present in an amount of about 0.01 and 5% by weight.

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16. The method of claim 7 wherein the solution further comprises a coloring principle, an agrochemical principle or both.